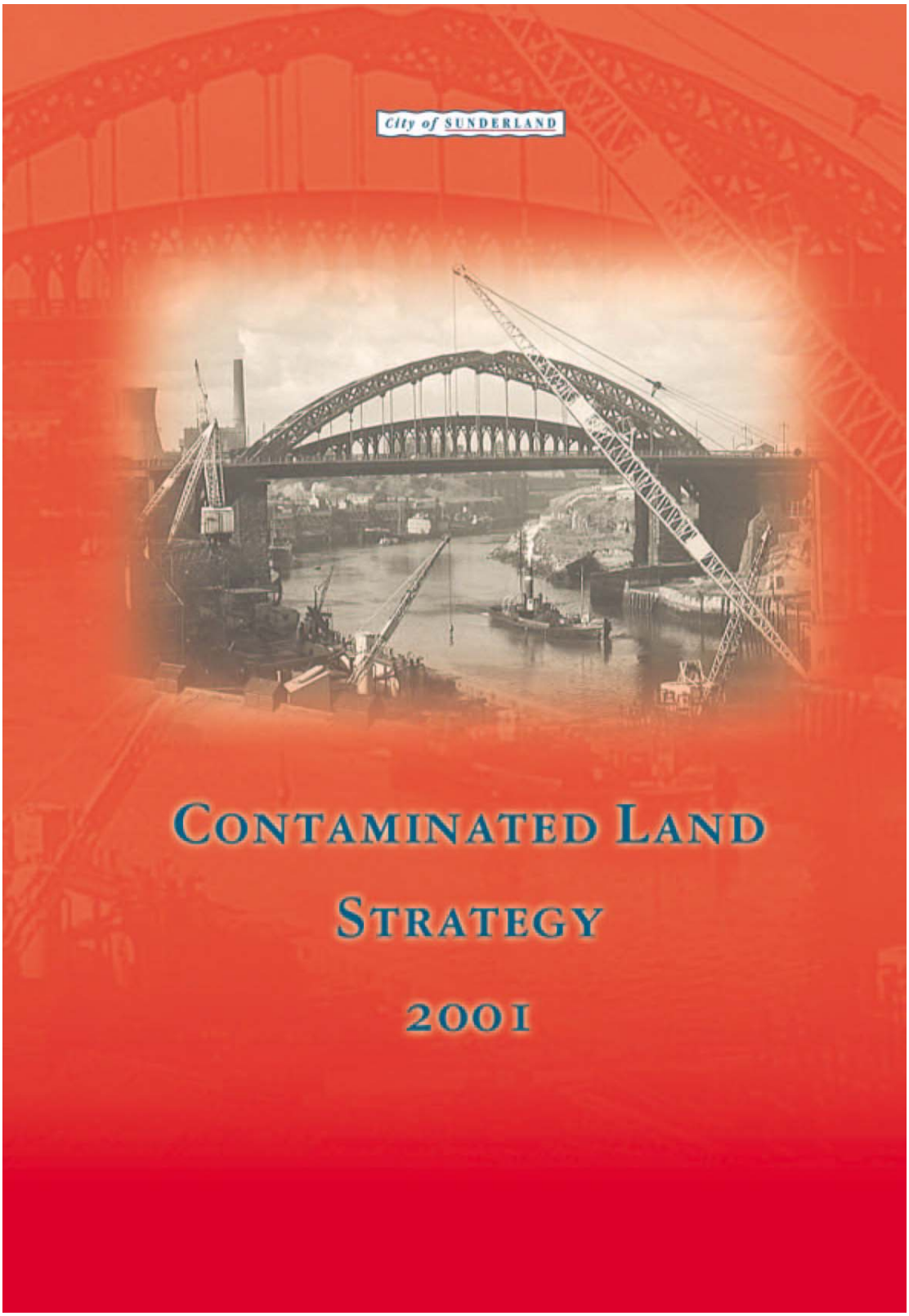
City of SUNDERLAND
CONTAMINATED LAND
STRATEGY
2001

City Health and Housing Services

Environment Department

This Document is for Public Consultation.

Any questions or comments
should be addressed to:

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A questionnaire is included at the rear of this document which can be returned to the address above.

Further copies are available in local Sunderland libraries and from the City of Sunderland Website.

www. Sunderland.gov.uk

EXECUTIVE SUMMARY

The following strategy has been produced by the City of Sunderland in compliance with the statutory duties imposed by Part IIA of the Environmental Protection Act 1990. The contaminated land strategy has been divided into ten chapters which detail the characteristics of the City, the aims and priorities of the Strategy and indeed the Council, the procedures to be adopted and the projected timescales by which each will undertaken, the mechanisms by which communication and review of the Strategy will be incorporated by the Council and finally the means by which information will be collated and managed.

As such the Strategy provides an account of the mechanisms by which the City of Sunderland will endeavour to implement local best practice with regards to current statutory and non-statutory guidance relating to the identification and remediation of contaminated land.

Additionally the Strategy is intended to provide a reservoir of information which will be available for reference during the development and implementation phases of the Strategy.

In acknowledging the existence of land contamination the Strategy attempts to provide a clear, transparent framework upon which future actions will be determined and the timescales therein. The Strategy takes account of the history and specific physical characteristics of Sunderland and proposes to prioritise potentially contaminated land using the following hierarchy of risk:-

1. Human health
2. Controlled waters
3. Animals and livestock
4. Environment e.g. designated ecological areas and historic environment
5. Property; structures and landforms

The City of Sunderland recognises its role within the regulatory context of contaminated land but will endeavour to maximise the scope for voluntary land remediation (where contamination has become an issue) without automatic reliance upon its powers under the Environmental Protection Act 1990. However, where circumstances necessitate i.e. where the application of voluntary remediation gives rise to an increased risk to any of the aforementioned priorities, the Council of course proposes to refer to the appropriate regulatory action. Such action will undoubtedly generate information which is highly sensitive by its very nature. The

Strategy therefore documents the means by which such information will be sensitively controlled.

The Strategy is a working document and as such will be subject to an annual review for the first five years in order to incorporate public and stakeholder views as well as taking into consideration growing knowledge of the subject. Future reviews will be dependent on the amount of contamination encountered and the significance of previous revisions to the Strategy during this first five-year period.

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CHAPTER ONE

1. INTRODUCTION

1.1 General Policy of the City of Sunderland Council

The purpose of this Strategy is to set out how the City of Sunderland Council intends to identify, inspect, risk assess and ensure remediation of contaminated land within its area. It is written with reference to the Community Strategy for Sunderland, the overall aim of which is to ensure 'Sunderland will be a prosperous international City - a desirable and secure place to live, study, work and visit where people can reach their full potential.'

One of the main values which underpin the development and delivery of the Community Strategy is that of Sustainability, to ensure that meeting today's needs will not deprive future generations of the ability to meet theirs.

The Sustainable Development Strategy for Sunderland identifies the Councils strategy in relation to Local Agenda 21 and includes the following objectives:-

- To identify contaminated land presenting a risk to the public, water resources and biodiversity and undertake / enforce schemes to make it safe and if feasible and appropriate suitable for redevelopment.
- To work in partnership with other local authorities and the Environment Agency to make improvements to air and water quality, protect water sources from contamination and minimise the release of harmful products into the environment.
- To increase the proportion of new development occurring on previously developed land.
- To reclaim derelict land for a range of urban and rural uses.

The Inspection Strategy for Contaminated Land is written having considered the recommendations of the above strategies and also in relation to the Councils Best Value Performance Plan and Enforcement Concordat.

1.2 A Multi-Disciplinary Approach

Contaminated land, if not dealt with adequately, can pose serious threat to the health of the environment and thus has become a key issue which encroaches upon numerous areas of the City Council's business. To this end contaminated land requires expertise from all disciplines including planning, building control, property transactions and even extends to maintenance/works contracts throughout the City. The Strategy must

encompass all of these areas and provide a clear framework within which all relevant departments must operate.

Although the new contaminated land regime places new duties on local authorities, land contamination is not a new issue for the City of Sunderland. Experience to date with sites such as Lambton Cokeworks and former laundry in Fulwell have demonstrated that land contamination can be a significant problem in all areas of the City.

Consequently, it is essential that the City of Sunderland has, and implements a rational, ordered and efficient strategy to demonstrate its commitment to dealing with issues related to contaminated land in a consistent and transparent manner. This is reflected in the Council's approach to local government which consistently emphasises the need to be open and accountable for its actions. This document has therefore been presented as a consultation document and made available to all interested sectors of the community, businesses and developers.

1.3 Regulatory Context

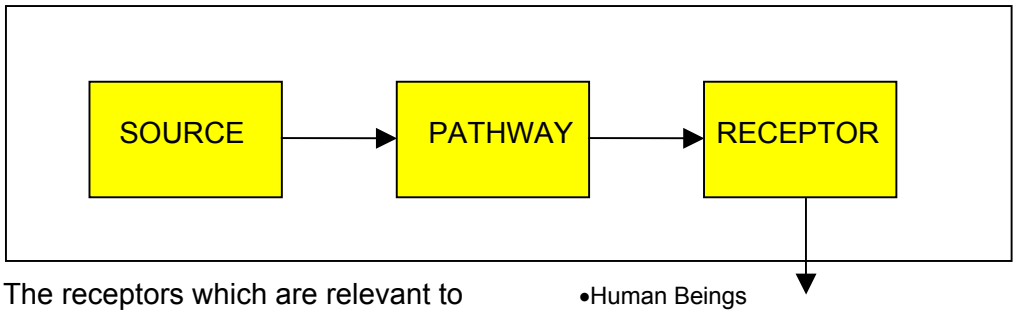
Part IIA of the Environmental Protection Act 1990 (inserted by Section 57 of the Environment Act 1995) provides the new regulatory regime for the identification and remediation of contaminated land.

Section 78A(2) provides a precise definition of the meaning of contaminated land and interprets it as:

"any land which appears to the local authority in whose area it is situated to be in such a condition, by reasons of substances in, on or under the land, that -

(a) *Significant harm is being caused or there is a significant possibility of such harm being caused; or*
(b) *Pollution of controlled waters is being, or is likely to be, caused".*

The implication of the terms "significant harm" and "significant possibility" is that the pollution linkage concept (i.e. the linkage between a contaminant and receptor by means of a pathway), is utilised in this field. The pollutant linkage is demonstrated below:



The receptors which are relevant to land which may be contaminated due to their potentially sensitive nature are;

- Human Beings
- Ecological systems or living organisms forming part of a system within certain protected locations
- Property in the form of buildings
- Controlled waters

Consequently it is upon this basis that the City of Sunderland is now able to identify (using the principles of risk assessment) and remediate land on which contamination is causing unacceptable risks to human health or the wider environment. This will be done by adopting a strategic approach (see subsection 1.5)

The implementation of Part IIA in April 2000 has therefore required the production of a strategy by each local authority which is relevant to its area. The Strategy must identify potentially contaminated sites and evaluate them further to determine whether each site meets the statutory definition outlined above.

As such Part IIA of Environmental Protection Act 1990 provides clear distinctions between the duties of the local authority and those of the Environment Agency;

Environment Agency	Local Authorities
Provide relevant information held by the Agency to local authorities	Prepare and publish an inspection strategy
Ensure remediation of Special Sites	Inspect their areas to identify contaminated land
Maintain a public register of regulatory action for Special Sites	Consult the Agency on pollution of controlled waters
Prepare a national report on the state of contaminated land	Ensure remediation of land identified as contaminated land
Provide advice to local authorities on identifying and dealing with pollution of controlled waters	Transfer Special Sites to the Agency
Provide advice to local authorities on the remediation of contaminated land	Maintain a public register of regulatory action
Environment Agency, 2000: ***Contaminated Land, Part IIA of***	***the Environmental Protection Act 1990***

Table 1 Duty of the Local Authority and Environment Agency

1.4 Development of the Strategy

With reference to *"Contaminated Land Inspection Strategies - Draft Technical advice for Local Authorities"* produced by the Department of the Environment, Transport and Regions, this Strategy has been developed in accordance with the above requirements. The Strategy has been developed in a systematic way as detailed below.

Sunderland City Council has determined that responsibility for the development of their strategy should be distributed between City Health Pollution Control Section and the Environment Department

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Early recognition indicated that many other Divisions of the City Council could either contribute to, or would be affected by, the Strategy. A multi-disciplinary working group has therefore been established to facilitate the exchange of information and ensure that the requirements of all relevant departments of the Authority are taken into account in the preparation of the Strategy.

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Employees of the City Health Pollution Control Section developed this Strategy in liaison with the Environment Department, the Environment Agency and the North East Contaminated Land Forum.

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All appropriate public bodies referred to in Paragraph B11 of the Statutory Guidance were consulted by letter in November 2000

1.5 Objectives of the Strategy Document

The principal objectives in the drafting and implementation of the Strategy areas follows. These are further illustrated in the form of a tabulated matrix in Appendix A.

I. To ensure general compliance with the provisions of the statute;

II. To assure that enforcement of the statute is undertaken in a consistent and transparent manner;

III. To develop a strategic approach to inspection which is rational, ordered and efficient and can be implemented to be proportionate to the seriousness of any potential risk. The City of Sunderland will endeavour to concentrate resources on investigating areas where contaminated land is most likely to be identified.

IV. To address the issues associated with the remediation of sites in the City to ensure that the process deals effectively with any contamination in, on or under the land;

V. To ensure that the City of Sunderland provides clarity of information and good understanding of what risks from contamination mean, as an integral composite of effective communication between regulatory, scientific and interested parties and all other stakeholders;

VII To ascertain the extent of liability and surrounding issues associated with the Council's existing land holdings and take constructive action to minimise the risk of liability associated with future land acquisitions;

VIII. To seek to ensure that the cost burdens faced by individuals, companies and society as a whole are proportionate, manageable and economically stable by limiting the requirements for remediation to the work necessary to prevent unacceptable risk to human health or the environment; and,

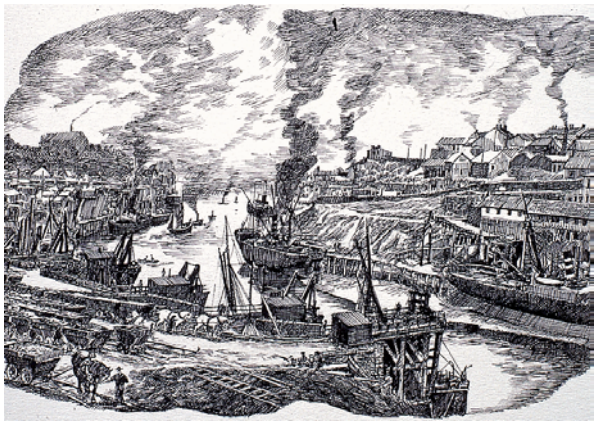
IX To provide on a regular basis and through the implementation of effective communication, up-to-date information to the Environment Agency for its report on contaminated land.

CHAPTER 2

2. CHARACTERISTICS OF THE CITY OF SUNDERLAND

Sunderland is currently undergoing one of the greatest transformations in its history in becoming a city which is bursting with dynamism, energy, ambition and promise. Sunderland naturally offers a multitude of profitable qualities. Sunderland, a City-by-the-sea following the achievement of City Status in 1992, has beautiful coastline, riverside and countryside. It is the largest City between Leeds and Edinburgh with almost 300, 000 residents all of who benefit from good road, rail, sea and air links.

Of course Sunderland has not always been able to boast such attributes and in the 17th Century was described as a black and gloomy town in the extreme, where the atmosphere was so filled with smoke that blue sky was seldom seen. However, much has changed since then and it is true to claim that the City of Sunderland has emerged as a vibrant and upbeat city.



The provision of this section is intended to supply an explanation of the relevance of the characteristics of the City in relation to the Council's

approach to inspecting potentially contaminated land and a base upon which this strategy can be compared to other local authorities.

2.1 Geographical Location

The City of Sunderland is set in the northeast of England on the coast of the North Sea and northeast of the Pennine mountain range (see Figure 1). The north and south of the district are divided by the River Wear and the City, which is the

Figure 1 Great Britain

largest of the five districts that form Tyne and Wear, is broadly characterised by the dispersion of heavy and light industry and populated areas, and large areas of open space.

The City of Sunderland includes the urban area of Sunderland together with the former urban districts of Hetton-le-Hole, Houghton-le-spring and Washington (see Figure 2)

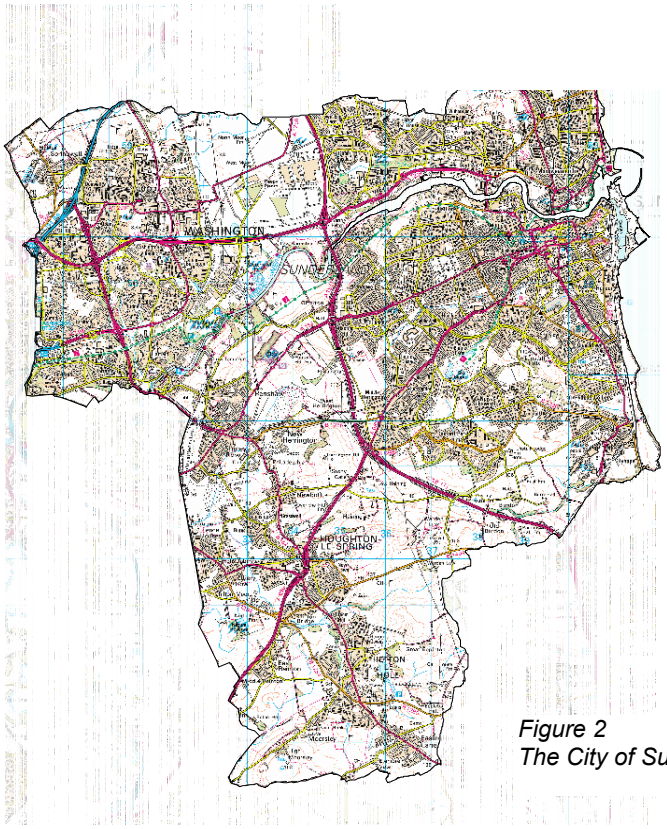


Figure 2
The City of Sunderland

2.2 History of the Area

The area now known as Sunderland was first settled by people at least five thousand years ago. Their arrival inevitably led to changes in the local landscape and the exploitation of environmental resources. Throughout the eighteenth century coal mining in the area grew rapidly which in turn gave rise to the spread of railways and a thriving shipbuilding industry. Within a short time the town was to become one of the cornerstones of the Industrial Revolution.

The economy of the City (which was once based on the coal mining and shipbuilding industries), is now much more diverse, with employment in a variety of manufacturing enterprises, including the Nissan car factory and associated suppliers and an increasing range of service activities. Although traditionally an industrial area, Sunderland has a rich heritage. This consists of an environment which includes sites of architectural and archaeological interest and attractive features such as the River Wear Valley, the coastline and the west facing scarp of the East Durham plateau, but indeed the historical Sunderland has left a legacy of contaminated land for the generation of today.

2.3 Size of the Area

In 1994 the City of Sunderland Boundary Commission rationalised the City Boundary, the main changes being the addition of land west of Shiney Row (Boundary Houses and Lambton Cokeworks) and loss of the Birtley Services (on A1M) and land west of Fencehouses. As a result, the City now comprises approximately 13, 739 hectares.

The built up area of Sunderland consists of 8518 hectares leaving 5221 of Countryside (1996 fig). Within the built up area there is a net total of 1027 hectares of industrial land (January 2000) with a further 200 hectares allocated for industrial use in the Unitary Development Plan (adopted 1998).

2.4 Population Distribution

The City has been divided into four distinct areas for the Unitary Development Plan area proposals (see Figure 3) and population figures are available for these areas.

The Sunderland South area is defined to the west and southwest by the A19, to the north by the River Wear, by the coast in the east and by the southern boundary of the City with Easington District in County Durham.

The population of this area is almost half of the City's population estimated at 122,560 in 1998 (Tyne and Wear Research and Information - Ward estimates 1998).

The North Sunderland area is defined to the west by the A19, to the north by the boundary with South Tyneside, to the east by the coast and to the south by the River Wear. The area is highly urbanised with an estimated population of 59,730 (T & W R & I – 1998).

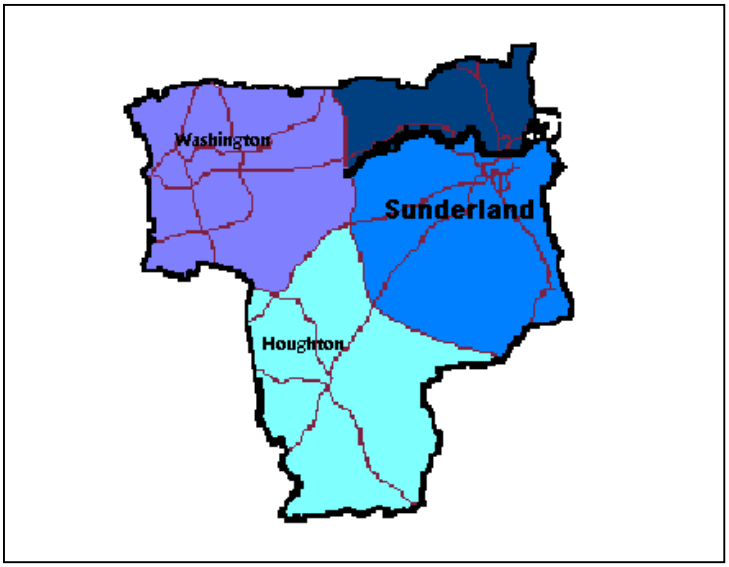


Figure 3 Population Distribution within the City of Sunderland

The Washington and Springwell area, in the north west of the City is bounded by the Metropolitan Boroughs of South Tyneside and Gateshead to the north and west, the

A19 to the east and River Wear to the south. The 1998 estimated population for Washington is 61, 780 (T & W R & I – 1998).

Houghton/Hetton is the area defined by the A19 to the east, the River Wear to the north and the City Boundary with County Durham and Chester-le-Street District Council to the west, Durham City to the west and south and Easington District Council to the south. The estimated population for Houghton/Hetton is 48,430 (T & W R & I – 1998)

2.5 Authority Ownership of Land

All information on the land owned by the City Council is held within the Administration Department, Property Information Unit. The information is continually updated and available to the inspection strategy team. Where land is owned by the Council the actual ownership is generally broken down by Department to reflect the land use although there are some areas where there are anomalies but generally land owned by Leisure Committee is Parks and Open Spaces, Management Committee land for office or industrial purposes etc.

2.6 **Current Land Use Characteristics**

Sunderland South

The Northern part of the area is more urbanised and densely developed; it includes the City Centre. The southern part is characterised by a number of distinct settlements, including the modern Doxford Park township and former mining villages which have been incorporated into Sunderland. The breaks between these settlements include the Silksworth-Ryhope Crescent, in which major recreational facilities have been created on reclaimed colliery sites.

Industry - There are old industrial areas along the riverside and coastline, including the South Docks. There are still some heavy industrial uses in these areas. New land for industry is located on the fringes at Pennywell, Leechmere and Doxford International.

Housing - This is an area of contrasts with the densely developed inner urban area compared to the more dispersed estates resulting from post-war house building.

Retail - Sunderland Centre is the major retail focus in the City; elsewhere there are local shopping centres.

Hospitals - There are 5 hospitals in the area but 3 are likely to be closing in the near future with the majority of services transferred to the recently expanded Royal Hospital.

Open Spaces -The area has a number of substantial open spaces with linear parks linking the urban core to the surrounding countryside and major recreation areas at Silksworth Sports Complex and Tunstall Hills.

Waste Treatment -The City's main waste management facilities are located in the Sunderland South Area. Sewerage for north and south Sunderland drains mainly to the Hendon Sewage Treatment Works by a system of interceptor sewers.

Sunderland North

The river corridor has been regenerated for the majority of its length to form the Hylton Riverside which extends from Barrons Quay in the west to the Queen Alexandra Bridge in the east. Other industrial areas include Ferryboat Lane (Sunrise Business Park), Low Southwick, Sheepfolds and Bonnersfield. The predominant land use is residential, with the housing stock and its environment varying in age and quality.

Washington

Industry and commerce are significant in Washington with fifteen industrial estates of varying sizes including the Nissan Complex. Washington is a very popular location for private housing in addition to relatively modern Council housing stock. The Town is based round 18 villages contained within a landscaped setting with a good road and footpath network.

The village of Springwell is within the Washington area but outside the new town designated area and has a series of stone and slate terraces, developed to house workers for the coal mine and quarry. The mine ceased in 1932 but the quarry is still in operation along with a landfill site.

Houghton/Hetton

This area stretches southwards from the Wear Valley and Penshaw Monument including the magnesian limestone escarpment. The urban area forms a linear band of settlements along the A182 from Penshaw/Shiney Row to Easington Lane. It contains extensive areas of countryside and there are remnants of old agricultural settlements in the built up areas.

The current urban form has largely been shaped by the development of the mining industry although there are no deep mines left in the area. Small to medium size industrial estates exist in each of the settlements.

2.7 Protected Locations

Despite Sunderland's image as an industrial city, its 'rural' areas are extensive, some 5, 700ha, a figure second only to Gateshead amongst the Tyne and Wear districts.

Much of the City's rural area is protected from development by designation as statutory green belt. Where it abuts the Green Belt the physical form of the built up area gives rise to an 'urban fringe' where there are particular land uses to be reconciled. Increasingly the rural area is coming under pressure to accommodate 'urban' land uses, particularly for recreation, as more people turn to the countryside to satisfy their casual leisure needs, and for mineral exploitation because of the regional and national need. Despite this, farming remains the predominant activity in the rural area and continues to have a profound impact on the character of the landscape.

In addition to its wealth of farming activities, the City's rural area has many sites of botanical and geological interest and a variety of habitats of value to wildlife; these are classified as Sites of Special Scientific Interest (SSSI's) 17 of which are located in the City, Local Nature Reserves (LNR's[1]), Sites of Nature Conservation Importance (SNCI's [68]) of Regionally Important Geological/Geomorphological Sites (RIGS[4]). Certain linear features (e.g. open breaks and disused railways) play an important role as wildlife links and corridors.

2.8 Key Property Types

The character of the urban areas of Sunderland varies markedly, determined by the design, layout, age, land use and tenure of development; housing

however forms the bulk of the urban areas. The inner City is densely developed, lacking in green spaces with a large proportion dominated by the older industrial fabric. Outer areas are more spaciously laid out and their urban form softened by trees and landscaping, although there are large estates and coalfield settlements. Within this overall setting are the historical 'jewels' of the City; its conservation areas, listed buildings, sites of architectural and archaeological interest, all of which require careful consideration when remediating contaminated land.



Manufacturing and service industries are particularly concentrated in three broad locations in the City; the coastline south of the mouth of the River Wear; along both banks of the river up to Hylton Bridge and at Washington. Other more recent (post 1960's) developments are in individual large industrial estates distributed throughout the City. In addition to this there are over 600 listed buildings in the City which are classified by grade which is indicative of their relative importance. Many of these list entries comprise terraced properties or groups of individual buildings.

2.9 Key Water Resource/Protection Issues

2.9.1 Controlled Waters

The statutory definition of contaminated land refers to the pollution of controlled waters of which there are four types; ground waters; inland waters; coastal waters; and relevant territorial waters.

2.9.2 Ground Water

Northumbria Water supplies the majority of the City's drinking water from reservoirs throughout the country. However, groundwater provides over one-third of all our drinking water. As such the protection of groundwater is a duty that has been delegated to the Environment Agency.

Source Protection Zones (SPZ's) have been defined by the Environment Agency for groundwater sources (wells, boreholes and springs) used for public drinking water supply. These zones, as marked in Figure 4, provide an indication of the risk to groundwater supplies, for which SPZ have been defined, that may result from potentially polluting activities and accidental releases of pollutants.

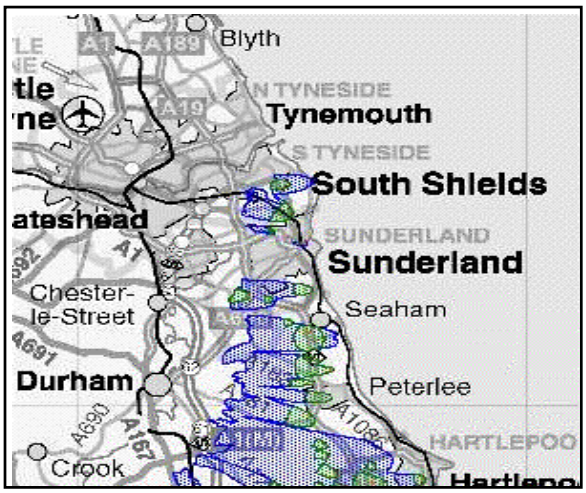


Fig 4 - Groundwater Protection Zones, Environment Agency

Generally the closer the activity or release is to a groundwater source the greater the risk. Three zones (an inner, outer and total catchment) are usually defined although a fourth zone (zone of special interest) is occasionally defined.

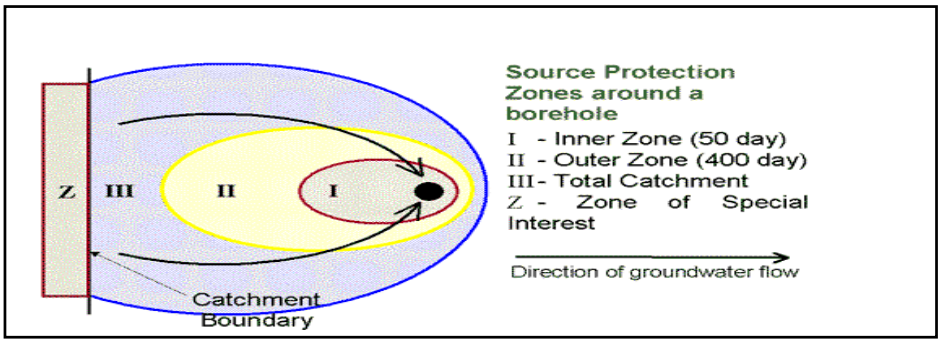


Fig 5 - Source Protection Zones, Environment Agency

The primary use of groundwater SPZ is to signal that within specified areas there are likely to be particular risks posed to the quality of abstracted groundwater at the source(s) to which the SPZ refer should certain activities take place nearby. Used in conjunction with the Groundwater Protection Plan (GPP) they offer an initial screening tool for assessing specific activities. The SPZ can also help pollution prevention measures to be more effectively targeted and planned in those areas most at risk.

The SPZs indicated on the map consider all significant public water supply and private wells or boreholes in Sunderland that supply water to potable or equivalent standards (groundwater sources). For example mineral waters, breweries, food processing etc.

It should be noted that SPZ have only been derived by the Environment Agency for the above types of source, whereas there are many thousands of other licensed and unlicensed abstractions supporting industrial, agricultural, domestic and other uses which would be a local consideration.

The risks posed by a particular activity to an existing groundwater source depends on its proximity. More specifically, the pollution threat depends on whether the activity is located within the catchment of that source and on the time it would take (travel time) for any contaminant in the groundwater to reach the source. The SPZ relate purely to groundwater flow below the water table and do not take account of the depth to groundwater and the nature of the overlying soils and rock which may have an important influence on groundwater vulnerability (see subsection 2.12).

All such zones will be marked on the Council's Geographical Information System (GIS) and shall be viewable along with other themes, or factors, in the determination of a site.

In addition to this the City Council regularly inspects the quality of the three private drinking water supplies in the area.

2.9.3 Inland Waters

Inland waters include watercourses, ponds and lakes. Sunderland boasts only one principal river, the Wear, but many smaller courses; the River Don; Barnes Burn; Cut Throat Dene, Hendon Burn;

Herrington Burn; Hetton Burn and; Hylton Dene Burn. The Wear is situated in the north of the City and runs from the west towards the North Sea. It, along with other rivers in the North East is renowned for its flashy runoff behaviour, with very high flood discharges superimposed on a relatively low long-term base flow. This low baseline reflects the generally low permeability and storage of the Lower Carboniferous rocks which underlie much of the catchments of the area.

The smaller courses are dispersed throughout the City. These are relatively short watercourses in general, parts of which run in culvert. Within the Wear catchment area there are currently 879 discharge consent on operational premises which encompass a variety of industrial activities.

2.9.4 Coastal and Territorial Waters

Outside of the bounds of the docks and harbour etc. it is expected that the North Sea will provide considerable dilution of any pollutants that may be present in discharges from watercourses within the City or from the aquifers. It is expected that these will be undetectable in

comparison to background levels when the proximity of the River Wear is considered.

The areas of water which provide greatest concern in relation to contamination are those in closest proximity to the beaches, particularly those used for bathing.

Additionally concerns have been raised regarding the contamination of coastal waters from sources other than contaminated land i.e. from consented discharges from industrial operations and from nearby sewage treatment works.

2.10 Known Information on Contamination

The council possesses a degree of information on land contamination in the City, primarily submitted as part of the development control programme run in conjunction with Landmark™ data purchased by the City of Sunderland, (see Chapter 4).

Site Investigation reports may be obtained through the Council's Landscape and Reclamation Teams, the more recent of which contain information on potential contamination of sites. This information is currently being inputted as an additional layer on the landmark data. Site investigation information is also held by the University of Sunderland and the Tyne and Wear Materials Laboratory based at Gateshead Borough Council, which will be input in due course.

Personal knowledge within the Pollution Control and Reclamation Teams of potentially contaminated sites will be drawn upon. This includes areas

such as Lambton Cokeworks, the Port, industrial areas where potentially contaminant uses are located i.e. the south bank of the river from Coles Cranes to the Queen Alexandra Bridge.

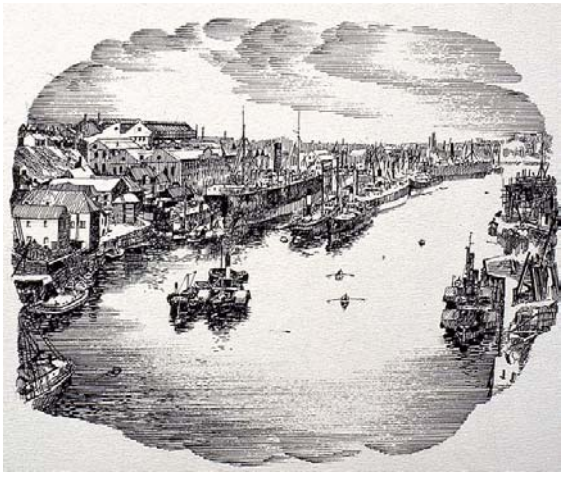
2.11 Current and Past Industrial History

Sunderland grew from a number of small settlements near the point where the River Wear enters the North Sea, to become a major commercial centre. The economy of the City was once based on the thriving coal mining and shipbuilding industries but is now much more diverse, with employment in a variety of manufacturing enterprises, including the Nissan car factory and associated suppliers and an increasing range of service activities.

2.11.1 Shipbuilding

This is the industry with which Sunderland is chiefly associated and which commenced in earnest on Wearside in the last quarter of the 18th Century during which time production and profitability fluctuated greatly. During the first half of the 19th century many more shipyards were founded on Wearside, predominantly along the banks of the River Wear.

At this time the primary construction material utilised was wood and inevitably the increase in the shipbuilding industry brought with it an increase in the demand for timber suppliers and sail and rope making facilities etc.



The tradition of the growth of the shipbuilding industry continued throughout the latter half of the 19th century. At this time the majority

of vessels were still powered by sail as the Sunderland yards were much slower adopting the use of iron than elsewhere. As the century drew to a close however, the production of iron ships began to prosper but this was only achieved at the expense of smaller building yards which were forced to close. At the close of the century only thirteen yards remained open. The majority of these were situated along the banks of the River Wear and their prosperity continued throughout the war years.

Following the war the shipyards remained buoyant for some time but during the late eighties Wearside became painfully aware that shipbuilding in Sunderland had come to an end.

However, although the yards themselves have disappeared it is likely that they will have left their mark in the form of organic and inorganic contaminants in the soil and mudflats.

2.11.2 Coal Mining

The first half of the 19th century witnessed a great increase in the exploitation of the northern coalfields owing to growing demand for coal and technological advances. Sunderland is situated on clay and Permian magnesian limestone, and it was the advances in technology which allowed the coal beneath the limestone to be reached. In 1826 work commenced on sinking Monkwearmouth Colliery, work which followed closely on the heels of that at Hetton. At this time it was thought that the coal seams stretched for many miles and were inexhaustible.

Indeed, this trend continued into the beginning of the 20th century and this period witnessed the opening of Ryhope Colliery in 1859, Silksworth Colliery in 1873, and Hylton Colliery in 1900. When coalmines were nationalised in 1947, there were 127 collieries in County Durham and among such were several in or near Sunderland.

However, the relative short-lived success of the coalmining industry in Sunderland sank into oblivion in the latter quarter of the century when only two pits remained open in Sunderland, Wearmouth and Herrington. Finally, in 1993 the last Wearside coalmine closed.

Despite the closure of the mines they cannot be forgotten, as it is likely that they have left behind a legacy of organic and inorganic contaminants.

2.11.3 Alternative Industries

Among other industries on Wearside during the first half of the 19th century were glassmaking, rope making and the manufacturing of pottery. Like the shipbuilding and coal mining industries, these industries flourished over the 19th century and their location throughout the City was highly diverse. Consequently the legacy of inorganic contaminants which such industries have left behind in the soil etc. is likely to be equally diverse.

2.11.4 Railways, the River and Docks

In the first half of the 19th century much of the coal produced in Sunderland was shipped down the River Wear to waiting colliers. However, this tradition was disrupted as coal began to be moved by wagon-way (or railway). The Hetton Colliery actually occupies a place in history since it was the first line to be completed by George Stephenson and used locomotives as well as stationary steam engines and self-activating inclines to move coal.

In 1836 the Sunderland and Durham Railway opened (with a station at Hendon). In 1839 The Brandling Junction, from Gateshead and South Shields, was opened to Monkwearmouth and so travel to Sunderland by rail could be undertaken from both north and south of the River Wear. Growth in this area continued and despite the closure of localised mines etc. rail has continued to be an important and influential mode of transport to date with the Sunderland Metro development as the most recent addition.

Although the railways etc. aided in bringing prosperity to the area, it is probable they also brought numerous inorganic contaminants which must now be considered.

While the traditional heavy industries have passed away, Sunderland remains the setting for significant industrial activity (partly as a result of government initiative). The Government has established Enterprise Zones at Castletown, Hylton Riverside and Doxford Park. Within these zones special financial advantages are given and outline permission for certain classes of development has been granted by Development Orders.

The north-western part of Sunderland, north of the River Wear and between the A19 on the west and Newcastle Road on the east gained 'City Challenge' status in 1993 and has benefited from enhanced investment in the area which has allowed an accelerated programme of improvements.

The Unitary Development Plan (adopted in 1998) forms part of the development of the Council's overall strategy for regeneration and improvement of the City. The upturn in the industrial future of Sunderland, reflected in the grant of City status and the advent of major national and international investment through Nissan and enterprise zone initiatives etc. have enhanced the City's potential for new development.

2.12 Geological and Hydrogeological Characteristics

The significance of contamination on a site and the risks posed by it can be affected very significantly by certain physical factors, such as geology and hydrogeology.

The geological and hydrogeological characteristic of the Sunderland area described in detail in Appendix B

2.13 Specific Local Features

The topography of the Sunderland area varies from 185 metres in the west to sea level in the east. This subsequently has an effect upon the climate of the area. Sea breezes frequently blow across the coastal part and the orientation of the Wear Valley causes some funnelling of prevailing westerly winds and although the warming effect of air descending from the Pennine mountain range breaks up much of the frontal cloud over the area, the average area rainfall near the coast is approximately 630 mm. Annual evapotranspiration

ranges from 350mm to 500mm in lower areas and this therefore bears upon stream flow and groundwater recharge.

Thick boulder clay over much of the Sunderland area has prevented widespread problems of groundwater pollution by agricultural nitrate or industrial contamination. Examples of land contamination resulting from now defunct industry are likely to be located mainly near the conurbations along the River Wear, however, it is not expected that any such sites have affected Major Aquifers.

2.14 Redevelopment History and Controls

In the last 25 years the Council has presided over the reclamation of almost 9 square kilometres of derelict industrial and other land, returning them as assets to the community. Notable has been the reclamation and improvement of disused mines and collieries such as Ryhope, Silksworth, Hylton, Houghton, New Herrington and Wearmouth, whilst Fullwell Quarry is entering the final phase of a 15 year reclamation saga. The area converted from industrial use to countryside is far greater than the area of greenfield site brought into employment use during the same period and thus represents a net gain to the countryside.

2.15 Action Already Taken to Deal with Land Contamination.

The City of Sunderland has been actively involved in the remediation and regeneration of land and has maintained formal records of activities since 1974.

The process of incorporating these sites onto the City Council's Geographical Information System is currently underway and these will be reviewed in light of current guidance.

CHAPTER THREE

3. OVERALL AIMS OF THE STRATEGY

3.1 Aims of the Strategy

As detailed in subsection 1.5, all local authorities are required to take a strategic approach to inspecting land in its area for contamination. The statutory guidance requires that the approach adopted should be rational, ordered and efficient, proportionate to the seriousness of any actual or potential risk, ensure that the most pressing and serious problems are located first, ensure that resources are concentrated on investigating areas where the authority is most likely to identify contaminated land and efficiently identify the requirements for the detailed inspection of particular areas of land.

The aims of this strategy are:

- To detail how contaminated land in Sunderland is to be identified, inspected, risk assessed and remediated.

- For remediation to be proportional, having regard to the presence or otherwise of interests with conservation importance, including those of historic importance.

- To ensure that any development of land within Sunderland takes place with full consideration of the potential for contamination and that where necessary conditions are set to ensure the safe development of a site.

- To prioritise land in the order by which it is most likely to cause significant harm to human health, controlled waters, animals and livestock, the environment, the historic environment and to property.

- To identify any Council owned land that is contaminated and determine the most suitable course of action to ensure remediation.

3.2 Objectives and Milestones

The implementation of the Strategy will take place in two parts, firstly the identification and assessment of potentially contaminated sites based upon information already held and secondly, the identification and assessment of the remaining areas of the City to determine the likelihood of contamination. This inspection program can be broken down into a series of objectives and milestones with specific target dates.

3.2.1 The establishment of efficient liaison information exchange both internally and with external bodies.

The production of a Contaminated Land Liaison and Communication Strategy for the City

September 2001

3.2.2 Collate existing information on previous contaminative uses of land and identify potential contaminants and risks. Identify potential receptors and pathways.

September 2002

3.2.3 Produce a list of prioritised sites based upon the sites identified above in 3.2.2 and their potential to cause harm to human health or controlled waters.

January 2003

3.2.4 Inspect and assess the list of prioritised sites in order of priority.

To identify other areas of the City where potential contaminative uses of land have occurred, potential receptors and pathways

January 2005

3.2.5 To carry out a review of the prioritised list of sites identified in 3.2.3 above in light of any new sites identified during the gathering of information for the completion of 3.2.4. This will be a continual process throughout the implementation of the Strategy as the site prioritisation

model will be re-run at frequent intervals as further information is gathered.

July 2005

3.2.6 Inspect and assess the list of prioritised sites in order of priority.

September 2006

CHAPTER FOUR

4. PRIORITY ACTIONS AND TIMESCALES

4.1 Prioritisation of Sites

Having considered the complex pattern of land use in Sunderland it was not considered appropriate to focus on any particular area or industry.

The identification and prioritisation of land within the City will therefore take place by gathering information on possible contaminative sources over the entire area together with information on receptors and potential pathways. The principles detailed in Contaminated Land Research Report No 6 (CLR 6), Prioritisation and Categorisation Procedure for Sites which may be Contaminated, published by the Department of the Environment, will considered in the prioritisation of sites identified.

This information will be entered onto the Council's Geographical Information System (GIS) to form a database of information to which a site prioritisation model will be applied. This model will allocate a score to each layer of information on the GIS that a particular site is located on. The higher the score of any particular site the higher the priority that the site be given a full assessment.

The layers or themes will be created by gathering information from various sources and entering the data onto the GIS. The sources of information and the method by which the model will prioritise sites are discussed in more detail in chapter 7.

The site prioritisation model will be applied to data currently held on the GIS regarding historical land use throughout the City. This historical land use data has been gained from Ordnance Survey maps and is held upon the GIS. This has identified over 1000 potentially contaminated sites in Sunderland. The site prioritisation model will be applied to these sites initially to identify any high priority sites that may require immediate action.

The model will be re-run at frequent intervals to enable further information on sites, receptors and pathways to be evaluated and prioritised.

4.2 Response To Complaints and Sites of Imminent Danger

Complaints or information received from members of the public, businesses or any other source about potentially contaminated land or problems caused by a particular site will be dealt with initially by officers from City Health & Housing Services. This will include any areas of land that officers of the Council regard as high priority based upon local knowledge.

Any complaint received will be actioned as soon as possible and within a maximum of five working days. Should officers discover situations where significant harm is being caused or there is a significant possibility of such harm being caused or pollution of controlled waters is being, or is likely to be caused a detailed assessment of the site will be undertaken and any necessary action instigated.

4.3 Development Control

In addition to the provisions of the new contaminated land regime contamination of land can be a material planning consideration under the Town and Country Planning Act 1990. Planning Policy Guidance PPG23 states that contamination should be taken into account at various stages in the planning process, including the preparation of development plans and the determination of planning applications. The best way of minimising any associated risks is to ensure that sites which may be contaminated are identified at the earliest stage of planning.

Therefore one of the priorities of The Contaminated Land Strategy is to ensure that procedures are in place for interdepartmental communication and liaison on contaminated land issues. The application form for planning applications is to be adapted so that it includes a requirement for the developer to have carried out a desk top study of the site considering the past historical use of the land and potential contamination.

Priority will be given to the assessment of those sites identified in the Unitary Development Plan (UDP) as immediately available for redevelopment. Following this priority will then be given to those sites identified as available during the UDP plan period.

In order to achieve the government target of 60% new development on brownfield sites the Environment Department is currently undertaking an Urban Capacity Study in order to identify potential sites to achieve this strategic aim.

4.4 Timetable for Prioritised Activities

Certain objectives and milestones have already been set in chapter 3 for the identification and assessment of contaminated land in Sunderland. Within the timescales already set targets have also been determined for the priority actions detailed above. These are as follows: -

Reports of potentially contaminated land made by the public, businesses or any other source will be investigated as soon as possible and within a maximum of five working days. Should a site be identified as a contaminated site an action plan will be determined and immediate action instigated to ensure remediation of the site.

Any sites that officers of the Council are aware of which are thought to pose a significant risk will be inspected and assessed and an action plan written for any sites determined to be contaminated

Ongoing

Amendments to the planning application form to include a requirement to carry out a desktop study and submit details with the application together with the establishment of effective liaison procedures with Development Control and Building Control.

The production of a Contaminated Land Liaison and Communication Strategy for the City.

The establishment of a Data Management System and Prioritisation Model

September 2001

The historical land use data is already held on the GIS database as a theme or layer. The sites identified as potentially contaminated are to be examined to identify key contaminants and scored depending on the potential to cause significant harm.

Additional themes are to be added to the GIS for receptors and pathways. Potential receptors are to be identified within Sunderland and rated according to their sensitivity / importance and added to the GIS as separate themes. The receptors in order of priority are as follows.

Residential properties, allotments, schools, nurseries, children's play areas

January 2002

Playing fields

March 2002

Source Protection Zones

May 2002

Parks, public open space and vacant land to which the public has access.

July 2002

All other areas including historic sites, the historic environment, conservation areas etc.

September 2002

The site prioritisation model is to be run to prioritise the sites identified in relation to their potential to cause harm.

January 2003

A desk top study is to be carried out starting with the high priority sites identified and a site inspection carried out where necessary.

Identify other areas of the City where potential contaminative uses of land have occurred together with potential receptors and pathways

January 2005

Re-run the site prioritisation model to take account of the updated list of potentially contaminated sites.

July 2005

Inspect and assess the list of prioritised sites in order of priority

July 2006

CHAPTER FIVE

5. PROCEDURES

5.1 Internal Management Arrangements for Inspection and Identification

The Pollution Control Section of City Health and Housing Services together with the Environment Department are responsible for the identification and inspection of contaminated land. The formation of a multi-disciplinary working group facilitates liaison with other departments and provides a focus for consideration of contaminated land issues on a Council - wide basis.

The Director of Health and Housing has delegated power to enforce the provisions of the Environmental Protection Act 1990 Part IIA which deals with contaminated land.

In carrying out this responsibility the Director may incur expenditure, set fees and charges for the delivery of service, deploy resources within his control and procure other resources within or outside of the Council. This is provided that these actions are within the Council's Delegation Scheme, Standing Orders and Financial Regulations.

The Director will consult the relevant member(s) of the Cabinet and/or Chairman of the relevant Committees prior to taking action where: -

i) in the opinion of the Director the taking of action has policy or significant financial implications; or
ii) where the member of the Cabinet has given a prior indication that he wishes to be consulted on the matter or type of matter.

5.2 Considering Local Authority Interests in Land

The Local Authority owns a proportion of land within the City of Sunderland. Each area of land has been acquired for the purposes of a Department of the Local Authority. The parcel of land therefore becomes that Departments responsibility.

The Property Information Unit within the Administration Department is responsible for maintaining records relating to Council owned land. This information will be digitised and added to the database of land information and will assist in the determination of appropriate person where relevant. Council owned land will be included in the prioritisation process as detailed in Chapter 4. Sites will be ranked on the basis of their perceived risk to cause significant harm irrespective of ownership or tenure. The Department which

holds any contaminated site would become responsible for any required remedial action and would act as owner for the purposes of the legislation. Notwithstanding this the responsible department may require technical information and advice from other departments of the Council i.e. the Environment Department on remediation proposals. However, it is vital to minimise the Council's future liabilities when land is purchased. Consequently whenever an area of land is purchased by the City Council a full assessment shall be undertaken to determine the likelihood of possible contamination and any remediation action necessary.

5.3 Information Collection

The collection of correct and factual information is perhaps one of the most important facets of the Strategy implementation, for without this it would be impossible to identify potentially contaminated land. In order to undertake this successfully a multitude of information sources will be used and cross-referenced to identify potential sites and receptors, the information will be stored where possible on the Geographical Information System. Where inappropriate to store on GIS because for example report length the information will be referenced on the GIS and its location recorded . Some of these are listed below.

INFORMATION SOURCE	
Current and Closed Landfill Records	GIS System and the Environmental Agency (EA) are to provide a register of closed landfill sites.
Contamination Source Points	Held on the GIS System from information provided by the EA. EA to advise of any new sources.
Departmental Records	The department holds records of previous complaints, notices served, investigations etc.
Geological/ Hydrological Maps	Information obtained from EA etc.
GIS	GIS used by Health & Housing and Env. Department.
Historic Maps	Digital maps purchased from Ordnance Survey
Integrated Pollution Control Register	Location of Part A & B processes held on GIS and City Health records.
Landmark Data	Digital maps purchased from Ordnance Survey (through Landmark)
Planning Records	Environment Department hold detailed planning records of development in the area
Source Protection Zones	EA to provide information regarding areas of groundwater that receive special protection
Trade Directories	Trawl of historical trade directories to identify previous industry not marked on landmark data.
Waste Management Licences	EA public register of sites licensed for waste management activities to be consulted regularly

Table 2 Sources of Information

5.3.1 Sunderland City Council has already established communications with the Environment Agency for the exchange of information relating to the pollution of controlled waters. Additionally the Council has established communications with English Nature for the exchange of information relating to potential incidents of harm to the environment.

5.3.2 In addition to these communication links, the Council has knowledge on the location of the following potentially sensitive receptors;

RECEPTOR	PATHWAY
Living Organisms	Ecological systems or living organisms forming part of a system within a protected location
Human Beings	allotments, residential areas with/without gardens, schools and nurseries, recreational areas, parks, playing fields, open space, commercial and industrial areas.

Table 3 Receptors and Pathways in Sunderland

City Health's Environmental Health Officer's are likely to be made aware of situations where actual harm to human beings, animals or livestock is thought to be caused. Such information should be relayed to the Pollution Control Section.

5.3.3 In addition to the sources of known information on potential contamination given in Chapter 2, the Authority will seek to identify local knowledge of potential historic contamination through appropriate publicity, particularly in conjunction with the publication of the Strategy.

5.4 Information and Complaints

It is already expected that on occasion the Council may receive complaints regarding potentially contaminated land, or the voluntary supply of information relating to land contamination that may not be directly affecting the information provider. The way in which such information will be controlled may have an impact on the approach to inspection and thus the procedures to be adopted follow.

5.4.1 The provision of information by any external party shall be dealt with following an information handling policy which is to be drafted to the specific issues contaminated land. This policy will have particular reference to the Environmental Information Regulations 1992 and is documented further in Chapter 9.

5.4.2 The issue of confidentiality will be addressed in the information handling policy, however, as with other complaints, the complainant in this instance will remain confidential. The only instance in which this information may be made public is if a remediation notice is appealed in a court of law and it necessary that the complainant provide evidence.

5.4.3 Any information which is provided anonymously to City Health or to the Environment Department regarding contaminated land shall be dealt with in accordance with the information handling policy. It is proposed that standard Council practice will be implemented and thus anonymously supplied information will not inherently institute immediate investigation.

5.4.4 All complaints received from the public, businesses or other external parties will be directed to City Health and Housing Pollution Control Team. All complaints will be dealt with following the same procedure currently employed to deal with statutory nuisances and thus complainants may expect;

i) their complaint to be logged and recorded;

ii) to be contacted by an appropriate officer regarding their complaint within five working days, and;

iii) to be kept informed of progress towards resolution of the problem.

5.5 Information Evaluation

5.5.1 In every case brought to light, identified sites will be marked on the GIS system in the form of a polygon and given an individual reference number. An electronic database is linked to the GIS system and as investigations progress the following information shall be added to the database;

I. Location and address of the site
II. Details (name and contact address etc.) of the present owner and/or occupier of the site
III. Current use of the site and that of adjacent sites
IV. Any buildings/structures on site
V. Brief indication of past industrial uses of the site as per Landmark™ data

VI. Any possible contaminants
VII. Any possible receptors
VIII. Any possible pathways
IX. Priority score of site

All information on substances in, on, or under the ground that may cause significant harm or pollution will be evaluated against current governmental guidelines. The Contaminated Land Exposure Assessment (CLEA) guidelines are expected from the Department of Environment, Transport and Regions in the imminent future but until their publication the Council will evaluate all obtained information against the guidelines previously issued by the Interdepartmental Committee on Redevelopment of Contaminated Land (ICRCL 59/83 [2nd Edition, July 1987] - *Guidance on the assessment and redevelopment of contaminated land*).

Should a substance not be included in the ICRCL Guidelines reference may be made to alternative guidance such as occupational exposure levels issued by the Health and Safety Executive or other authoritative bodies.

CHAPTER SIX

6. GENERAL LIASON AND COMMUNICATION MECHANISMS

The complex nature of the issues surrounding contaminated land means that much of the work proposed in this strategy will require co-operation and effective liaison and communication with external statutory and non-statutory groups.

6.1 Statutory Consultees

Contacts and alliances have already been established with member of the relevant statutory Consultees. The Consultees for the Contaminated Land Inspection Strategy are:-

- Environment Agency
- English Heritage
- English Nature
- Food Standards Agency
- Ministry of Agriculture, Fisheries and Food
- One North East

6.1.1 Provision of Information to the Environment Agency

The Environment Agency is required to prepare an annual report which is to be provided to the Secretary of State on the position relating to contaminated land in England and Wales. This report will rely heavily upon the information provided to the Agency from local authorities (since local authorities are the lead regulators on contaminated land) and thus in the provision of such information, the City of Sunderland will rely upon the guidelines agreed through the national forum of the Agency and the Local Government Association.

Additionally, standard information will be provided to the Environment Agency northeast whenever a site is designated as contaminated land, and whenever a remediation notice, statement or declaration is issued or agreed.

6.2 Non- Statutory Consultees

Because decisions about contaminated land are not likely to be made on a purely technical basis and land contamination is not just of relevance to the owner of the site, it is of paramount importance that any relevant stakeholders

are consulted (the relevant stakeholders will be addressed and listed in the pending Contaminated Land Liaison and Communication Strategy).

Because the wider community may be affected by the condition of the land within its area, it needs to be informed about any risks which are thought to exist from contamination. Clarity of information and good understanding of what risks from contamination mean, will play an important role in effective discussions between regulatory scientific and interested parties. In turn, it is predicted that communication with third parties will help to inform the regulatory and scientific process, providing important elements of the context in which decisions about the site will eventually be taken.

It is expected that community acceptance of decisions will require explicit information about assumptions, valid judgements, uncertainties and their effects on the decision, as well as technical information on the condition of the land. The regulatory approach of the City of Sunderland will therefore incorporate consideration of the views, priorities and expectations of those parties affected, as well as those responsible for the situation. All consultation will be carried out in accordance with the City of Sunderland's corporate consultation guidelines.

6.3 Risk Communication

Despite the appreciation of the need to communicate with all stakeholders the City of Sunderland realises that the complex nature of contaminated land issues does not lend itself to easy explanation to those who are unfamiliar with the subject. Selection and development of effective methods of risk communication is therefore crucial. It is proposed that a selection of the methods of communication listed in the table below will be utilised in the two-way communication process that respects the views of all participants:

The choice of which of these forms of communication will be used will be based on sound criteria which address a number of the objectives of the Strategy (these being the undoubted need for two-way communication, transparency to create trust in the regulatory role and openness).

Thus, the City of Sunderland has established that managing the potential conflict which may surround the issues associated with land contamination will require attention not only to the content of the information provided to stakeholders regarding risk, but also to the appropriate procedures at the relevant stages in the decision making process. This will be managed by the City of Sunderland City Health and Housing Services in order that risk communication can be addressed in line with the strategic approach of the Strategy and in order to gain public and stakeholder confidence.

The City of Sunderland will treat any concerns raised by a member of the public seriously and will endeavour to overcome the critical barriers to communication such as unfamiliarity and the dread factor. However, as the Regulations only grant local authorities a limited amount of power which may be exercised in relation to contaminated land, it is important to appreciate that perhaps a proportion of the expectations of the public will not be met by the implementation of the Strategy.

METHOD OF COMMUNICATION	ADVANTAGES	DISADVANTAGES
Focus Groups	Opportunity to learn about concerns and test messages	Interested parties need to be selected carefully to ensure that they are representative.
Mailed surveys and questionnaires	Provides input from individuals who may not be able to attend meetings	Can appear impersonal Response rate is generally low
Telephone surveys	Higher response rate than mail surveys	More expensive and labour intensive than mail surveys
Media Monitoring	Helps to identify key commentators and opinion-formers	Views and articles may not be representative
Proactive media management	Provides opportunity to target key journalists	Gives no guarantee of balanced coverage Non-media stakeholders should not learn about an issue first in the media
Open day	Fosters small and one-on-one discussions Allows vivid presentation of information	Potentially difficult to document public input Staff intensive
'Coffee morning' meetings	Informal and non-threatening Builds trust Provides accessibility	May attract limited audience due to time constraints
Briefings	Control of information Briefings can be re-used	Some people may be hostile Audience may feel unable to express views/concerns
Public information material **-Factsheets** **-Newsletter** **-Displays**	Can reach target audience Encourages written response if comment form is enclosed	Only as effective as the mailing list No guarantee materials will be read
Website	Interactive, Has a broad reach	Potentially limited target audience
Workshops	Fosters discussion Maximises feedback	Hostile participants Need >1 small group facilitators

Table 4 Environment Agency 1999 - Communicating Understanding of Contaminated Land Risks

6.4 The Public Register

The Regulations require that the City of Sunderland maintains a contaminated land register which is open to the public. The Regulations are specific in the information which must be publicly available and thus the following information will be included in the register;

1. details of remediation notices served:
   - site information
   - remediation information

   Any remediation action included will indicate whether the action required was "assessment action", "remedial treatment action" or "monitoring action".

2. details of site investigation reports obtained or received by the City of Sunderland relating to remediation notices.

3. the full particulars of remediation declarations, remediation statements and notifications of claimed remediation

4. any action taken by the City of Sunderland with regards to contaminated land under the statutory provisions of section 27, Part I of the Environmental Protection Act 1990 (Integrated Pollution Control), and section 59 in Part II of the Act (waste management licensing).

5. designation of sites as 'special sites'

6. the details of any site-specific guidance issued by the Environment Agency under section 78V(1)

7. any appeals against a remediation notice or charging notice.

8. the full particulars of any conviction under section 78M (failure to comply with a remediation notice)

The register will be held by the City Health and Housing department at the Civic Centre in the centre of Sunderland. This will be paper based to ensure accessibility upon request during standard office hours but will be set out in such a way to have regard to national security and commercial confidentiality.

CHAPTER SEVEN

7. PROGRAMME FOR INSPECTION

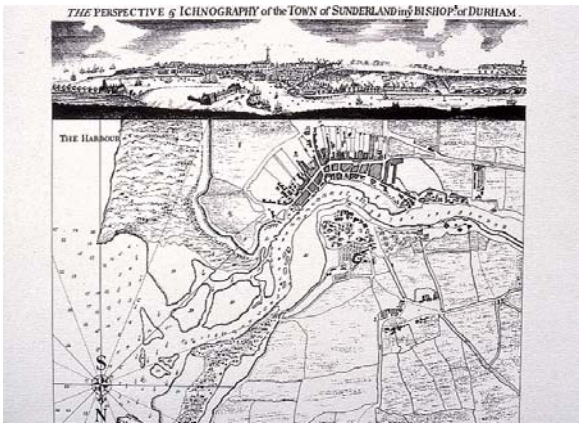
As stated in chapter 4 the prioritisation of potentially contaminated sites in Sunderland will initially be carried out using a site prioritisation model linked to a GIS data management system that will be used to hold all contaminated land information for a single point.

Land with a potentially contaminative previous use can only be classed as contaminated land where a pathway exists that connects contaminants to a receptor. Therefore rather than concentrating resources on areas of Sunderland where there has been previous heavy industrial use but where there may not be a receptor or a pathway, it is considered more appropriate to examine the entire area and prioritise the sites based upon the presence of contaminants, pathways and receptors.

This method of assessing the significance of potentially contaminative sites in Sunderland relies heavily upon the gathering of information on potentially contaminative sites, pathways and receptors. The first task in implementing this strategy is therefore the collection of information from various sources.

The two primary sources of information on historical land use in Sunderland are Ordnance Survey maps and trade directories which date back to 1870.

At present City Health Services has a database of historical land use that has been purchased from the Landmark / Ordnance Survey group. This information has been obtained from historical maps dating back to 1856 and is presented on the GIS as a seamless image of the City area with polygons, point and lines showing areas of land that have had a potentially contaminative use.



In addition to this information other potentially contaminative uses of land such as waste transfer stations has been provided in GIS format together with information on some potential receptors such as wells. This information has been input into the Councils GIS system as separate themes.

Further information will need to be gathered from various other sources as detailed in section 5.3.

Once the information sources have been researched and the information entered into the GIS database the site prioritisation model will be applied to the data. This operates by placing a grid of points across the map of Sunderland. A score is allocated to the various layers of information held on the GIS depending upon its significance. The model then produces a score for each grid point depending upon the layers beneath that site. If no contaminative use, pathway or receptor is present no score will be given to that particular grid point.

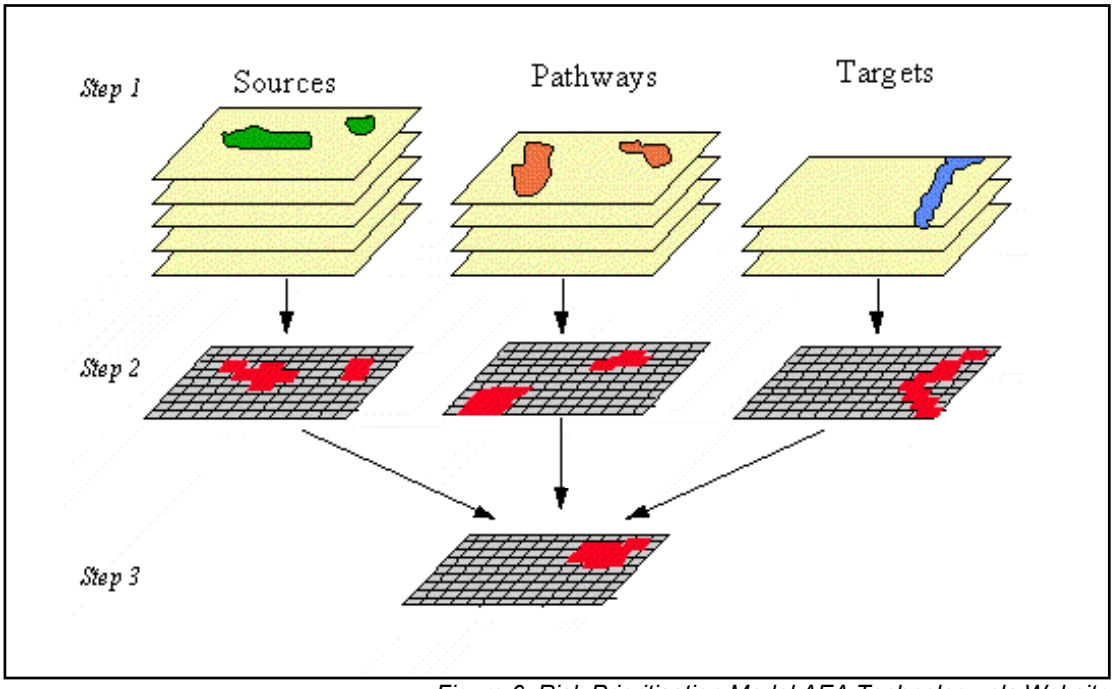


Figure 6 Risk Prioritisation Model AEA Technology plc Website

The site prioritisation model will be used to score sites on the basis of the significance of their pollutant linkages. This will generate a ranking as to which sites have the highest significance and should be investigated first. This will result in the concentration of resources and efforts in areas of significance.

7.1 Arrangements for carrying out detailed inspection

The implementation of this strategy will result in the identification of sites where it is possible that a pollutant linkage exists and therefore a further more detailed inspection will be required as recommended in the statutory guidance. The purpose of the detailed inspection will be to gather further information that will enable the authority to determine whether the land appears to be contaminated and whether it falls within the definition of a special site prescribed in the Contaminated Land Regulations 2000.

Where the authority is satisfied that there is a reasonable possibility of a pollutant linkage existing, a detailed inspection of the area will be undertaken in accordance with the statutory guidance.

The detailed inspection of the site will include the collation and assessment of documentary information together with a visual inspection and intrusive site investigation where necessary

The inspection of a particular site will be carried out based upon the principles detailed in Contaminated Land Research Report No. 2 (CLR 2), Guidance on Preliminary Site Inspection of Contaminated Land, published by the Department of the Environment (1994 edition).

The owners or occupiers of the land will be contacted and informed of the prioritisation status of the site and the need for further more detailed inspection. They will be asked to provide any information that they may possess on contamination or remediation of the site. Should the need for a site inspection become necessary the owner or occupier will be asked for permission to inspect the site.

Previous owners or occupiers of the site will where possible be determined and asked to provide any relevant information.

Depending upon the specific circumstances of the individual site any relevant persons or bodies will be contacted where necessary in accordance with the Councils Liaison and Communication Strategy.

Where it is not possible to identify those who have caused or knowingly permitted a pollutant to be in, on or under the land and where a pollution linkage has been identified, the site shall be treated as an orphan site. Where this is the case the local authority may undertake any remediation works necessary

Where it is necessary to carry out an intrusive investigation of a site all reasonable precautions will be taken to avoid harm, water pollution or

damage to natural resources or features of historical or archaeological interest which might be caused as a result of any investigation. English Nature will be consulted on any area notified as an area of special scientific interest to determine if actions undertaken by the owner or occupier would require the consent of English Nature under section 28 of the Wildlife and Countryside Act 1981.

Where intrusive site investigation is required the use of specialist consultants, contractors and analysts will be considered in accordance with the Council's Standing Orders with respect to any contracts.

If it appears that a site would fall within the definition of a 'special site' the Environment Agency will be contacted to ensure their involvement at the inspection stage.

Where the authority is satisfied that there is reasonable possibility of a pollutant linkage existing and access to the site has been denied the local authorities power of entry under Section 108 of the Environment Act 1995 will be used to gain access.

Before any visit to a site has taken place an assessment of the risks to personnel will be undertaken based upon the information available and relevant guidance on health and safety aspects of site investigations (e.g. HSE HS(G)66 Protection of Workers and the General Public During the Development of Contaminated Land, and CIRIA report132 A Guide for Safe Working on Contaminated Sites). Where particular hazards are identified such as the presence of asbestos, specialists will be considered for site investigation.

A flowchart illustrating the procedures that will be followed once a site has been identified is contained in Appendix C.

CHAPTER EIGHT

8. REVIEW MECHANISMS

The programme for general inspection of contaminated land in the City of Sunderland has been outlined in the previous chapter and although the Council will endeavour to adhere to this strategy there may be instances when the Council's approach may vary. This section is therefore designed to detail those instances when variation outside of normal inspection is required, and those circumstances under which previous inspection decisions, and indeed the Strategy itself, should be reviewed to ensure that the Strategy, a working document, remains effective and up to date.

8.1 Non-Routine Inspections

The triggers for undertaking non-routine inspections will include: -

1. Response to information - from internal departments or external parties such as other statutory bodies, landowners or occupiers, local residents etc.

2. Unforseen circumstances - such as a chemical spillage or other accidental leakage.

3. Change of land use - which incorporates a new receptor such as a housing development and the like.

4. Response to voluntary remediation - e.g. a potential liable party wishes to remediate the land prior to the programmed inspection by the local authority.

5. Response to new information regarding local health effects.

It is noted that undertaking non-routine inspections may conflict with the timescale laid down in Chapter 3 and thus such timeframes may have to be reviewed and amended throughout the course of the inspection programme.

In addition to this it may, on occasion, become necessary to review decisions which have already been made with regard to previous inspections. It is proposed that the triggers for such review will be: -

1. Response to new Government Guidance and Guidelines with regards to values for exposure assessment
2. Changes to current legislation
3. Institution of new case law or precedent

8.2 Review of the Strategy Document

This strategy is a working document and it is expected that as a new document, its review is essential in maintaining an effective, manageable and up-to date document. It is proposed in the Strategy that following the finalisation of the Strategy in June 2001, work will become concentrated on inspecting sites in the area. As this is somewhat of an unknown quantity it will be appropriate to undertake a review of the Strategy's effectiveness and progress following the first full year of operation i.e. June 2002. The findings of this review will be reported to The Contaminated Land Strategy Team and subsequently to the City of Sunderland Cabinet.

Additionally this review shall provide an opportunity to incorporate workable quantitative targets which may be determined during the first years implementation of the Strategy.

It is planned that such a review will be undertaken for the first five years of the operational strategy. Future reviews will be dependent on the nature and severity of any amendments made during this five-year period.

CHAPTER NINE

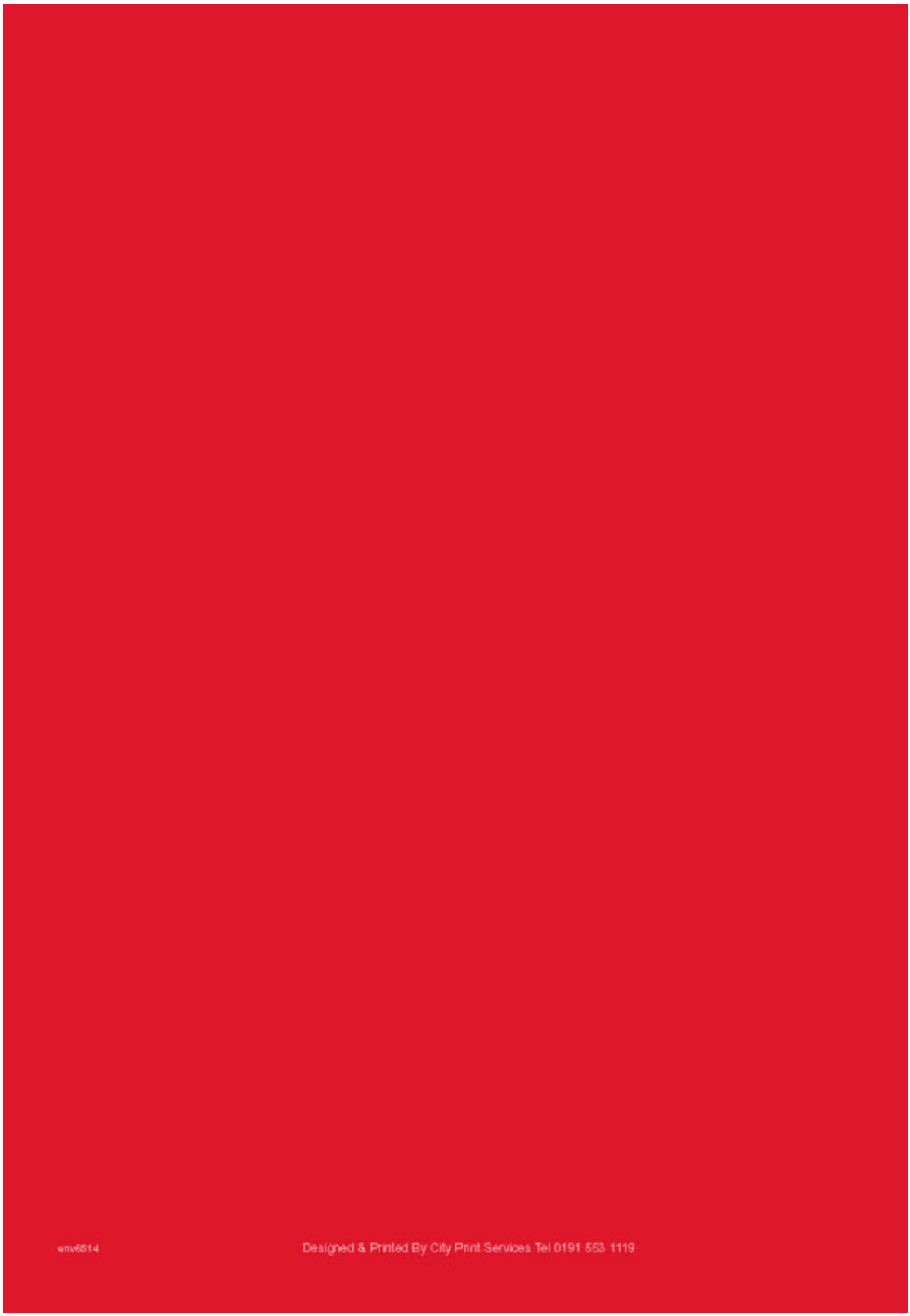
9. INFORMATION MANAGEMENT

9.1 Local authorities are being challenged to develop their role as leaders of their communities. The City of Sunderland believes information and communication technologies can play a vital part in this. The overall context of the work of the Council, therefore, is related to new commitments and challenges, which the City of Sunderland is facing. The information Technology revolution is impacting on everyday life, and therefore in the way local authorities are operating and will undoubtedly affect the manner in which information regarding contaminated land is handled.

As such, a clear policy will be drafted regarding the handling of contaminated land information. The following issues in particular will be addressed:-

- Information Storage systems
- Administration
- Confidentiality of Information
- Sensitivity of information with regard to 'blight'
- Arrangements for giving and restricting access to information; and
- Dealing with requests for information

9.2 The complex nature of the issues surrounding contaminated land means that much of the work proposed in this strategy will require co-operation and effective liaison and communication with external statutory and non-statutory groups. Such communication, including the provision of information to the Environment Agency is detailed in Chapter 6.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